CLAIMS

1. An electrically conductive adhesive for the improvement of the adherence of active electrode materials to conventional current collectors,

characterized in that

it comprises an aqueously dispersed fluoropolymer, an amine or ammonium salt of a perfluorocarboxylic acid, and a conductive material.

2. The adhesive according to claim 1, characterized in that the fluoropolymer is a terpolymer.

3. The adhesive according to claim 1 or claim 2, characterized in that the fluoropolymer is selected from the group consisting of tetrafluoroethylene (TFE), hexafluoropropylene (HFP), and vinylidene fluoride (VDF).

4. The adhesive according to any of the claims 1 to 3, characterized in that the perfluorocarboxylic acid is a mono- or dicarboxylic acid that has more than 6 C-atoms.

5. The adhesive according to any of the claims 1 to 4, characterized in that the amine is selected from the group consisting of RNH_2, $H_2NR\text{-}NH_2$, and $R\text{-}(NH_2)_3$, wherein R = alkyl, aryl, cycloalkyl.

6. The adhesive according to any of the claims 1 to 5, characterized in that it comprises an additional dispersing agent.

7. The adhesive according to any of the claims 1 to 6, characterized in that it comprises a copolymer on the basis of vinyl pyrrolidone/(meth)acrylic acid that is optionally used aqueous as ammonium salt.

8. The adhesive according to any of the claims 1 to 7, characterized in that the conductive material is selected from the group consisting of carbon black, graphite, and conductive organic materials.

9. The adhesive according to any of the claims 1 to 8, characterized in that the aqueous dispersion of the adhesive comprises a polymer content of 5 - 50 percent by weight, preferably 5 - 30 percent by weight, and in particular 5 - 20 percent by weight.

10. The adhesive according to any of the claims 1 to 9, characterized in that the amounts of the electrically conductive additives are 2 - 30 percent by weight, preferably 4 - 20 percent by weight, and in particular about 5 - 15 percent by weight.

11. The adhesive according to any of the claims 1 to 10, characterized in that it comprises additional additives selected from MgO, Al_2O_3, B_2O_3, and H_3BO_3.

12. The adhesive according to claim 11, characterized in that the additive content with regard to MgO, Al_2O_3, B_2O_3, H_3BO_3 that are utilized if necessary, is 0.5 - 5 percent by weight.

13. The use of an aqueously dispersed fluoropolymer together with an amine or ammonium salt of a perfluorocarboxylic acid and a conductive material as an adhesive, as it is defined in any of the claims 1 to 12, in an electrode for a secondary battery.

14. An electrode comprising a current collector, an adhesive, and an active electrode material, characterized in that the adhesive is defined according to any of the claims 1 to 13.

15. The electrode according to claim 14, characterized in that it exhibits a multilayer set-up.

16. The electrode according to claim 14 or claim 15, characterized in that the active electrode material represents an active cathode material.

17. The electrode according to claim 16, whereby the active electrode material comprises a transition metal oxide, in particular Co^{III}-oxide, Ni^{II}-oxide, Mn^{IV}-oxide, tungstate, molybdate, titanate, Fe^{III}-phosphate, ferrate, or chromate.

18. The electrode according to claim 17, whereby the transition metal oxide is a Li/transition metal mixed oxide.

19. The electrode according to any of the claims 16 to 18, whereby the lithium is present intercalated in the active cathode material.

20. The electrode according to claim 14 or claim 15, characterized in that the active electrode material represents an active anode material.

21. The electrode according to claims 20, whereby the active anode material is selected from the group consisting of graphite, carbon, carbon black, and fibers.

22. The electrode according to claim 20 or claim 21, whereby the active anode material is present in a form capable of intercalation, in particular for lithium.

23. The electrode according to any of the claims 14 to 22, characterized in that the current collector comprises an electrically conductive polymer, a synthetic material filled with an electrically conductive material, or a metal.

24. The electrode according to any of the claims 14 to 23, characterized in that the current collector is shaped in form of a film, fiber, mat, or mesh.

25. A secondary battery comprising at least one anode and one cathode, and at least one separator, characterized in that at least one electrode is defined according to any of the claims 14 to 24.

26. The secondary battery according to claim 25, whereby the battery is a lithium or lithium-polymer battery.

27. A method for the production of an electrode comprising a current collector, an adhesive, and an active electrode material,

characterized in that

it comprises the following steps:

providing an aqueous dispersion of an adhesive according to any of the claims 1 to 12;

producing a mixture of the aqueous dispersion with the active electrode material;

applying the mixture to a surface of a current collector; and

drying of the applied mixture.

28. The method according to claim 28 comprising additionally the step of degreasing the current collector before the step of applying the aqueous dispersion of the adhesive.